

COMBINATION OF MEDITATION THERAPY AND ROSE AROMATHERAPY REDUCE BLOOD PRESSURE AMONG ELDERLY IN MALANGREJO, NGEMPLAK, SLEMAN, YOGYAKARTA

F L Asmarani^{1*} A Fitralena²

¹Faculty of Health Science, University of Respati Yogyakarta, Jalan Raya Tajem KM 1,5 Maguwoharjo
Depok Sleman Yogyakarta

²Undergraduate student, Health Science Faculty University of Respati Yogyakarta

*corresponding author: ners fla@yahoo.com

Abstract

The problem that is often experienced by elderly due to the aging process in the cardiovascular system is hypertension. Elderly with hypertension in Indonesia is 25.8%, in Yogyakarta is amount to 12.8% and Sleman at 2016 showed 26.88%. Elderly with hypertension in Malangrejo is the most common disease. Pharmacological management of hypertension in the elderly results in adverse effects and management is increasingly complicated, so that non-pharmacological management takes precedence. Nursing Intervention Classification recommends meditation therapy and aromatherapy for the treatment of hypertension. Meditation is an easy to do and inexpensive activity, while roses are easy to grow and inexpensive plants. Research on reducing blood pressure with a combination of meditation therapy and rose aromatherapy is still not found. The aim of this study was to determine the effect of combination of meditation therapy and rose aromatherapy on reducing blood pressure among elderly in Malangrejo Ngemplak Sleman Yogyakarta. Average blood pressure showed 148.5 / 89.56 mmHg before intervention. After being given the intervention Blood Pressure became 128 / 77.17 mmHg. There is an effect of a combination of meditation therapy and rose aromatherapy on systolic and diastolic blood pressure in the elderly at Malangrejo Ngemplak Sleman Yogyakarta. Evidently, this combination of therapies can reduce blood pressure

Keywords: Meditation, Rose Aromatherapy, Blood Pressure, Elderly

1. INTRODUCTION

The elderly population in Indonesia has increased rapidly every year, so that Indonesia has entered the era of aging structured population. The population of the elderly in Indonesia, in 2010 amounted to 23.9 million (9.77%) with a life expectancy of 67.4 years old and in 2020 it was estimated at 28.8 million (11.34%) with a life expectancy of 71.1 year old [1]. One of the problems that are often experienced by the elderly is cardiovascular problem because the vulnerability of the physical condition of the elderly to various diseases due to reduced body resistance in the face of external influences and the decreasing efficiency of the homeostatic mechanism. Health problems resulting from the aging process and often occur in the cardiovascular system which is a degenerative process, including hypertension[2].

Hypertension that occurs in the elderly is generally systolic isolated hypertension where the arteries lose their elasticity. Hypertension in the elderly is divided into two types, namely hypertension at systolic pressure equal to or greater than 140 mmHg and or diastolic pressure equal to or more than 90 mmHg and isolated systolic hypertension has systolic pressure greater than 160 mmHg and diastolic pressure lower than 90 mmHg. Most people consider hypertension to be common in the elderly, so the majority of people underestimate this disease [3].

Prevalence hypertension for elderly in Indonesia was 25.8%, with prevalence in DIY amounting to (12.8%) and data from the Kabupaten Sleman Central Bureau of Statistics experiencing hypertension in Kabupaten Sleman of around 18,515 people or 26.77%. Although increased blood pressure is not a normal part of aging, the incidence of hypertension in the elderly tends to be high. After 69 years, the prevalence of hypertension increases to 50%. The results of the 2013 Riskesdas showed that the prevalence of hypertension tended to increase with age, with the highest prevalence occurring at ages above 75 years (63.8%), followed by ages 65-74 years (57.6%) [4]. This hypertension can cause a bad impact on the health of the elderly and can cause various kinds of complications [23]. Hypertension in the elderly is the most common disease in Malangrejo. 10 elderly who performed blood pressure checks 4 of them had blood pressure above 140/90 mmHg, 3 elderly had blood pressure 130/80 mmHg, and 3 elderly had blood pressure 120/80 mmHg. In addition, cadres and the elderly also said that they did not know the benefits of meditation therapy and rose aromatherapy, and there had never been anyone doing research like what the researchers would do.

Management of hypertension commonly used pharmacological such as: Diuretics, ACE Inhibitors, Calcium Channel Blockers, Beta Blockers, and Angiotensin II Receptor Blockers (ARB) [5]. Along with the decline in the function of various organs in the elderly, so that the side effects of all hypertension drugs consumed continuously can make the health of the elderly increasingly bad and management more complicated [6]. So non-pharmacological management is needed that does not cause side effects endanger the health of the elderly. Non-pharmacological therapy that can reduce blood pressure is by applying complementary therapy. Some examples of complementary nursing therapies that can be given to hypertensive patients include therapy, meditation, massage, yoga, music, herbs, acupuncture, cupping, and aromatherapy [7]. One of the complementary therapies that can be done on elderly people who suffer from hypertension contained in the NIC is meditation therapy and aromatherapy [24].

Meditation therapy is a technique to concentrate the mind to be more alert and wise, and can be used to prevent or cure illnesses. This therapy focuses more on respiratory regulation and increases concentration [19]. This is evidenced by the results of research that meditation therapy can help reduce blood pressure in the elderly. To make the elderly more comfortable and relaxed, it can be added to aromatherapy which can stimulate the autonomic nerves to relax so that it can help reduce blood pressure and one of them is rose aromatherapy [8].

Rose aromatherapy is a therapy that uses rose essential oil which extracts and its chemical elements are taken intact which has anti-depressant properties, lowers blood pressure, and can overcome insomnia, migraines, nervous tension, stress, and sadness. Rose Aromatherapy will stimulate the autonomic nervous system. This system controls involuntary movements of the respiratory system and blood pressure [9]. In line with the research, it was found that rose aromatherapy can reduce blood pressure in elderly people who suffer from hypertension [10]. Another study also found that aromatherapy roses affect blood pressure reduction in elderly people who have hypertension [11].

Research on reducing blood pressure with meditation therapy combined with aromatherapy roses is still no found, so researchers want to see the effectiveness of the two therapies combined. Besides that roses are easier to get at a cheap price and are easy to grow in tropical areas such as in the Sleman area of Yogyakarta. This makes researchers interested in knowing whether the combination of meditation therapy and rose aromatherapy can reduce pressure on the elderly.

2. MATERIALS AND METHODS

This study uses pure experiment quantitative research with pre and post-test without control group research design. Interventions to respondents was a combination of meditation therapy and rose aromatherapy (essential oil) were given by evaporating and doses of 1-5 drops (0.25 ml) with a dilution of 3%. Therapy was given \pm 10 minutes 3 times a week for 1 week. Blood pressure measurements were carried out before and after the intervention using a digital Sphygmomanometer with the OMRON HEM-8712 brand. Meditation therapists lead meditation in the middle of the room and the elderly will form circles with the therapist as the centre. Each aromatherapy is placed in the corner of the room amount four.

The research was carried out at the Malangrejo Ngemplak Elderly Posyandu Sleman Yogyakarta on March 24 - 31, 2019. The affordable population in this study was the elderly at the Malangrejo Ngemplak Elderly Posyandu in Sleman Yogyakarta with 70 elderly people. The sample in the study must meet the following criteria: having diastolic blood pressure 140-160 and systolic 90-100 mmHg, having no cognitive impairment (measured by the Short Portable Mental Status Questionnaire), not experiencing olfactory disorders (measured by giving the smell of coffee and eyes on close), not allergic to rose aromatherapy, not having a respiratory problem, not taking hypertension drugs, not having a stroke, and no hearing loss (measured by a whisper test).

The number of samples in this study was calculated based on the calculation amounting to 18. This study uses probability sampling method with the sampling technique used is simple random sampling. After selecting the elderly who fit the criteria, the sample is chosen by randomization by taking a lottery. Hypothesis testing on systolic pressure using Wilcoxon because the data is not normally distributed where the saphiro wil test results show p-value <0.05 , while the diastolic blood pressure hypothesis test used is T Test Paired because the data is normally distributed.

3. RESULTS AND DISCUSSIONS

The data in table 1 shows that the most experienced hypertension were women, which amounted to 16 elderly (88.9%) and 16% of the elderly liked oily foods.

Table1. Respondent's Frequency Distribution of Food Consumption and Gender in Malangrejo in March 2019 (N=19)

Characteristic	N	%
Food Consume		
Salty Foods	12	66,7
Oily Foods	16	77,8
Gender		
Male	2	11,1
Female	16	88,9
Total	18	100

It is known that blood pressure before being given an intervention has a systolic blood pressure with an average value of 148.50 mmHg and a diastolic blood pressure of 89.56 mmHg. After intervention, Systolic Blood Pressure became 1228 mmHg and 77.17mmHg in diastolic blood pressure.

Table2. Blood Pressure in the Elderly in Malangrejo in March 2019 (N=18)

Blood Pressure	Mean	St Dev	Min	Max
Pre Systolic	148,50	7,970	140	160
Pre Diastolic	89,59	8,83	70	100
Post Systolic	128,00	12,656	122	160
Post Diastolic	77,17	9,889	62	91

Hypertension is an increase in blood pressure where systolic blood pressure is 140 mmHg and diastolic is ≥ 90 mmHg [12]. The incidence of hypertension tends to occur in the elderly due to the aging process. The aging process is a condition of the decline of various functions in the organs of the body such as the more vulnerable the body in attacks of diseases that can lead to death. The influence of the aging process can cause various problems for the elderly one of which occurs in the cardiovascular system [13]. The results showed that the respondents in the Malangrejo Ngemplak Sleman Yogyakarta had stage I hypertension on average.

The cardiovascular system will experience a decline in functions such as the elasticity of the aortic wall and blood vessels decreases, the heart valves thicken and stiffen, the heart's ability to pump blood decreases, causing contraction and volume decrease and increasing blood pressure caused by increased resistance of peripheral blood vessels [13]. WHO states that hypertension is a degenerative disease that is often found in the elderly. Hypertension is a circulatory system disorder that causes blood pressure to rise above normal. Hypertension in a long time can damage vascular endothelial cells and accelerate the occurrence of atherosclerosis [14].

Complications from hypertension can damage various organs of the body such as the heart, kidneys, brain and also large blood vessels. If people with hypertension have other cardiovascular risk factors, it will increase the mortality rate due to the disorder [15]. Several risk factors for hypertension are age, sex, nutrition and others. Hypertension cases at the age of less than 50 years are more common in men than women because women have estrogen hormones that can prevent hypertension, but after 55 years or 60 years hypertension is found in women than men because at this age women are entering menopause and estrogen production continues to decline [16]. In this study based on the results of the respondent sex data, there were 30 female and 6 male sexes.

Data obtained by researchers from interviews with respondents showed that increased blood pressure in respondents was caused by age and could not control food such as excessive salt and fat consumption. The results of data analysis showed 16 elderly people liked oily food. Intake of high salt (sodium) can cause hypertension, especially if the kidneys suffer from disturbances such as the elderly because kidney function in the elderly starts to be abnormal so it cannot excrete sodium in a normal amount, consequently sodium in the body and intravascular volume increases so that hypertension occurs. High fat consumption can also increase blood pressure, especially saturated fat, making low density lipoprotein (LDL) cholesterol increase which over time will accumulate in the body and can form plaques in blood vessels. The plaque will clog the arteries, affecting the increase in blood pressure. Increased fat intake can increase the activity of the sympathetic nervous system which will eventually cause hypertension [17].

Table3. Effect of Combination Meditation Therapy and Rose Aromatherapy on Systolic And Diastolic Blood Pressure In The Elderly In Malangrejo In March 2019

Blood Pressure	Δ Mean	P-Value
Systolic	20,5	0,000
Diastolic	12,39	0,000

Table 3 shows that there was an average decrease of 20.5 mmHg in systolic blood pressure with a value of P-value 0.000. Table 3 also shows a decrease in diastolic blood pressure of 12.39 mmHg with p-value 0.000. This means that there is an effect of the combination of meditation therapy and rose aromatherapy on systolic and diastolic blood pressure in the elderly at Malangrejo Ngemplak Sleman Yogyakarta. Respondents also said they felt more comfortable and calm after being given an intervention.

Meditation therapy can provide a relaxing sensation, and refresh both mentally and physically, and meditation in general is able to increase the ability to concentrate, calm the mind, give a sense of peace, clear the mind, and control blood pressure [18]. The positive effects of meditation on cardiovascular function can make the heart rate will decrease at rest when experiencing acute stress. It also can make oxygen consumption for the body decreases, there is a decrease in lactic acid in the blood (metabolic waste) and the work of the heart decreases, causing blood pressure to fall [20]. The condition of relaxation will trigger the release of dopamine and suppress cortisol expenditure. Cortisol can trigger damage to blood vessel walls, which can cause an increase in blood pressure. This cortisol release is suppressed by meditation therapy [25].

Besides being due to the effects of meditation, aromatherapy of roses with a concentration of 0.25 ml dissolved in 10 ml of mineral water placed on all four corners of the room with 1 aromatherapy rose produce 25 ppm so 4 stoves produce 100 ppm in a 7X7 m² space on decreasing blood pressure. The content in aromatherapy roses can stimulate memory and emotional response. Aromatherapy roses contain aromatic elements which contain geraniol and linalool so that when rose aromatherapy is forgotten through the olfactory tract into the limbic system it stimulates memory and emotional response. Then the hypothalamus will deliver messages to the brain and change the messages received into actions in the form of electrochemical compounds that cause feelings of calm and relaxation [9].

Rose aromatherapy can also stimulate the thalamus to excrete enkephalin as a natural pain reliever and provide a calming effect. The soothing fragrance of rose aromatherapy will stimulate areas of the brain, namely raphe nucleus to secrete serotonin and endorphins which relax and can reduce blood vessel vasoconstriction activities, so that blood flow becomes smooth and blood pressure drops. Aromatic ingredients used in aromatherapy rose treatments will also stimulate the autonomic nervous system which controls involuntary movements of the respiratory system and also blood pressure [21]. The results of this study are in line with research regarding the effect of rose aromatherapy on decreasing blood pressure in elderly hypertension in the regency of Bundung Laut river village in 2015, which received a median result of 130.13 mmHg in systolic blood pressure and an average of 78.94 mmHg [22].

4. CONCLUSION

The mean blood pressure before the intervention was 148.50 / 89.56 mmHg and after the intervention was given 128.00 / 77.17 mmHg. The combination of meditation therapy and rose aromatherapy has been shown to reduce systolic and diastolic blood pressure in the elderly at Malangrejo Ngemplak Sleman Yogyakarta. Elderly people can apply combination therapy of meditation and aromatherapy rose independently as an alternative treatment to reduce blood pressure 3 times a week. Aromatherapy roses can be replaced by planting roses on the home page. For puskesmas can use combination therapy of meditation and rose aromatherapy and a special schedule can be made for the implementation of a combination of meditation therapy and rose aromatherapy in the elderly program at the Posyandu Lansia Malangrejo.

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